

REMARKS

Status of the Application

Claims 1-14 are the claims that have been examined in the instant application. Claims 1 and 5-8 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Soga et al. (U.S. Publication No. 2006/0061974). Claims 2, 9-12 and 14 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Jairazbhoy et al. (U.S. Publication No. 2002/0000331). Claims 3 and 4 stand rejected under 35 U.S.C. § 103(a) as being unaparentable over Soga in view of Jairazabhoy. Claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Jairazbhoy in view of Soga.

Claim Rejections - 35 U.S.C. § 102

A. Claims 1 and 5-8 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Soga et al. (U.S. Publication No. 2006/0061974).

The Examiner provides an identical argument in rejecting claims 1 and 5-8 as was presented in the Office Action dated October 31, 2006. Therefore, the following comments will be directed toward the Examiner's Response to Arguments found on page 5 of the instant Office Action.

Claim 1 recites, in part, "disposing a plurality of metal bonding film shapes in a pattern directly on a substrate ." The Examiner again alleges that Soga discloses all of the elements of claim 1. In response to the argument that FIG 7a fails to teach or suggest that heat is applied to the substrate and pressure is applied to the bonded element, the Examiner cites to FIG. 3 of Soga as disclosing all of the elements of claim 1. Applicants respectfully disagree.

FIG. 3 of Soga discloses an apparatus for die bonding an Si chip 8 to a W-Cu plating metallization layer 14 on a substrate 13 using a solder foil 11. A heater is disposed below the substrate, and the heating tool 7, to which the Si chip 8 is held by vacuum suction, applies 2 kgf of pressing force to the Si chip 8. However, FIG. 3 of Soga fails to disclose disposing a plurality of metal bonding film shapes *directly on a substrate*, as recited in claim 1. Rather, FIG. 3 of Soga discloses that the solder foil, which the Examiner alleges corresponds to the metal bonding film shapes, is disposed on the W-Cu plating metallization layer 14, not on the substrate. Therefore, Soga fails to disclose all of the elements of claim 1. Claim 1 is patentable over the applied art.

Claims 5-8 are patentable at least by virtue of their dependency from claim 1.

In the Response to Arguments, the Examiner also notes that Soga discloses heat being applied to the substrate. Applicants note that heat being applied to the substrate was not argued in the last response, but Applicants argued that FIG. 7a fails to disclose pressure being applied to the Si chips 8 *and* heat being applied to the substrate. The Examiner has not rebutted this argument. Since FIG. 3 and FIG. 7 disclose individual embodiments of the prior art, the Examiner must provide a motivation to combine the embodiments in order to reject claim 1 over a combination of FIGS. 3 and 7.

B. Claims 2, 9-12 and 14 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Jairazbhoy et al. (U.S. Publication No. 2002/0000331).

Claim 2 recites, in part, “disposing the bonded element above the first plurality of metal bonding film shapes and applying heat to the substrate and pressure to the bonded element,

thereby bonding the bonded element having the second plurality of metal bonding film shapes to the substrate having the first plurality of metal bonding film shapes.” The Examiner alleges that Jairazbhoy discloses all of the elements of claim 2. Applicants respectfully disagree.

FIG. 12b discloses that a body portion 98 of a component 93 is *rested* atop a plurality of metal bumps 16. See paragraph [0043] of Jairazbhoy. However, Jairazbhoy fails to disclose that pressure is applied to the body portion 98 of the component 93 in order to bond the body portion to a substrate 80. Rather, Jairazbhoy discloses that the bumps serve to maintain the component 93 at a given height, which would indicate that no pressure is applied. As heat is applied to the substrate, if pressure is applied to the body portion 98, the bumps would deform, causing a, undesired change in the height of body portion. Thus, Jairazbhoy cannot disclose all of the elements of claim 2. Claim 2 is patentable over the applied art.

Claims 9-12 and 14 are patentable at least by virtue of their dependency from claim 2.

Claim Rejections - 35 U.S.C. § 103

Claims 3 and 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Soga in view of Jairazbhoy.

Claims 3 and 4 are dependent from claim 1. Because Soga fails to disclose all of the elements of claim 1, and because Jairazbhoy fails to cure the deficient disclosure of Soga, claims 3 and 4 are dependent at least by virtue of their dependency.

Claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Jairazbhoy in view of Soga.

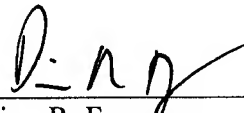
Claim 13 is dependent from claim 2. Because Jairazbhoy fails to disclose all of the elements of claim 1, and because Soga fails to cure the deficient disclosure of Jairazbhoy, claim 12 is patentable over the applied art.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Dion R. Ferguson
Registration No. 59,561

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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